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(71) Applicants:  
• **SERVICES PETROLIERS SCHLUMBERGER  
75007 Paris (FR)**  
Designated Contracting States:  
**FR**  
• **Schlumberger Technology B.V.  
2514 JG Den Haag (NL)**  
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**BE CH DE DK ES FI GR IE IT LI LU MC PT SE AT  
CY**  
• **SCHLUMBERGER HOLDINGS LIMITED  
Road Town, Tortola (VG)**  
Designated Contracting States:  
**GB NL**

(72) Inventors:  
• **Hart, Barrie  
Ipswich, Suffolk PK4 3BP (GB)**  
• **Johnson, Craig D.  
Montgomery, Texas 77356 (US)**  
• **Schetky, L. McD.  
Camden, Maine 04843 (US)**

(74) Representative: **Hyden, Martin  
Etudes et Productions Schlumberger,  
Intellectual Property Department,  
1, rue Henri Becquerel  
92142 Clamart Cedex (FR)**

(54) **Bi-stable expandable device and method for expanding such a device**

(57) An expandable device comprising a plurality of expandable cells (23). The cells may be bistable cells or other types of cells that are expanded from a contracted position towards an expanded position. Additionally, the cells may be combined with locking mechanisms to hold the structure in an expanded position.

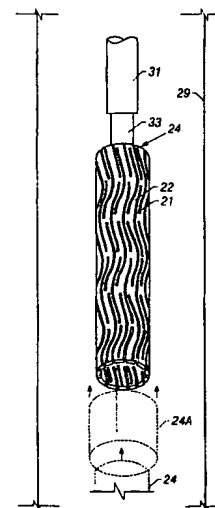
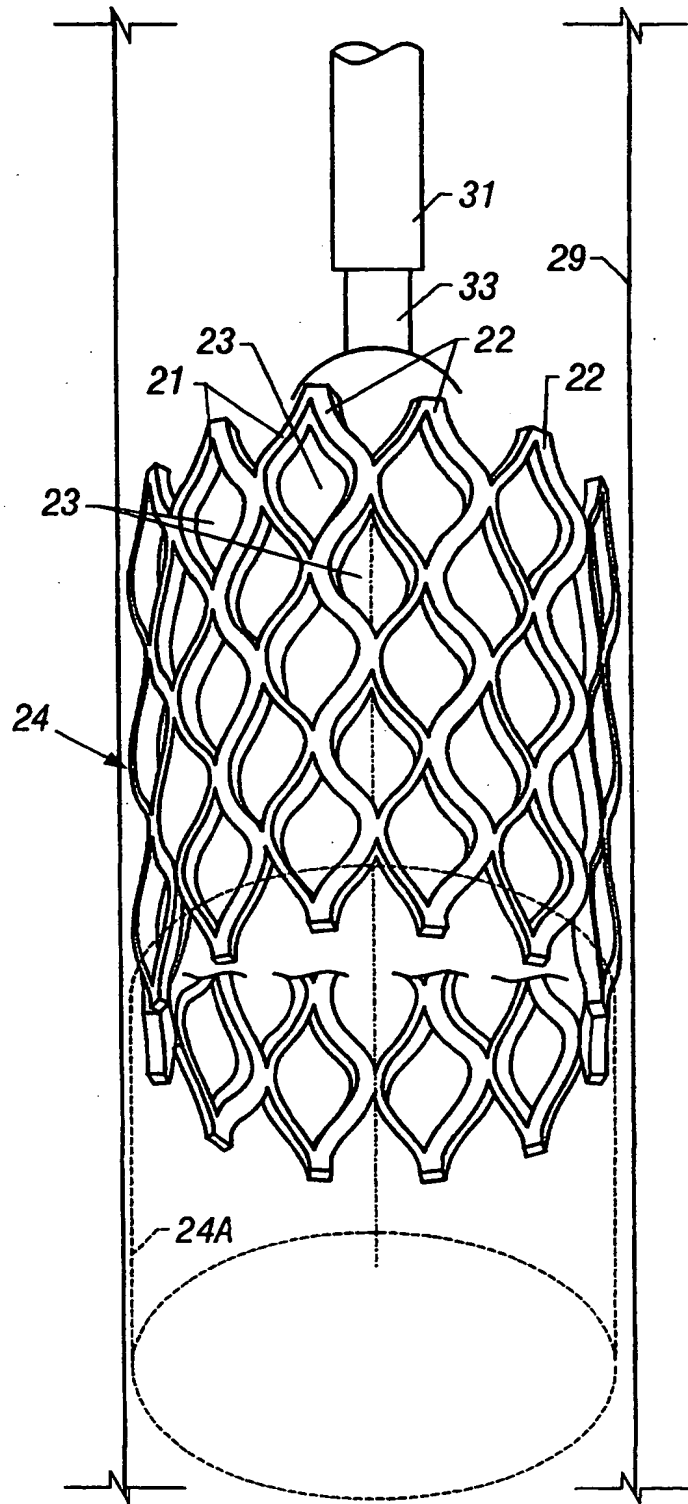


FIG. 4C



**FIG. 4D**



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# EUROPEAN SEARCH REPORT

Application Number  
EP 02 29 0106

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.C1.7)
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X	US 6 022 371 A (KILLION) 8 February 2000 (2000-02-08)  * column 3, line 50 - column 4, line 4; figure 1E *	39,40, 43,44, 49-53,55	E21B A61F F16L F16B
X	DE 197 28 337 A (INSTITUT FÜR MIKROTECHNIK MAINZ GMBH) 7 January 1999 (1999-01-07)  * abstract *  ----- -/-	39,40, 43,44, 47-53, 55,61-63	
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>19 September 2002</b>	Examiner <b>SOGNO, M</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after, the filing date D : document cited in the application C : document cited for other reasons &amp; : member of the same patent family corresponding document</p>			



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### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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## EUROPEAN SEARCH REPORT

Application Number  
EP 02 29 0106

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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A		2	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		19 September 2002	SOGNO, M
CATEGORY OF CITED DOCUMENTS			
<p>X: particularly relevant if taken alone  Y: particularly relevant if combined with another document of the same category  A: technological background  O: non-written disclosure  P: intermediate document</p> <p>T: theory or principle underlying the invention  E: earlier patent document, but published on, or after the filing date  D: document cited in the application  I: document cited for other reasons  &amp;: member of the same patent family, corresponding document</p>			

1: 020001 25: 0101 123: A302-C03



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LACK OF UNITY OF INVENTION  
SHEET B

Application Number

EP 02 29 0106

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-5,22,26,28-32

Expandable device having cells having a thin strut and a thick strut coupled by a pin joint or a ball and socket joint and method of expansion.

2. Claims: 6-10,18-21,23-25

Expandable device having cells having a thick strut and two thin struts.

3. Claims: 11-17,33,34,57-60

Expandable device having cells hold in open position by a spring member and method of expansion.

4. Claims: 35-38

Expandable apparatus having cells of different sizes or configurations.

5. Claims: 27,39-56,61-68

Expandable device having cells hold in an expanded state by a locking mechanism and method of expansion.



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# EUROPEAN SEARCH REPORT

Application Number  
EP 02 29 0106

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (InCL.7)
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X	WO 99 15108 A (MED INSTITUTE, INC) 1 April 1999 (1999-04-01)  * page 7, line 20 - line 22 * * page 16, line 21 - line 24 * * page 24, line 29 - line 31 * * page 34, line 12 - line 15 * * page 34, line 20 - line 23; figures 3,5,21 * * page 4, line 13 - line 15; claim 7 *  -/-	1,4-6,8, 10-18, 21,22, 25,26, 28,29, 31-38, 57-61, 64,65	TECHNICAL FIELDS SEARCHED (InCL.7)
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>19 September 2002</b>	Examiner <b>SOGNO, M</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another document of the same category  A : technological background  O : non-written disclosure  P : intermediate document</p> <p>1 : theory or principle underlying the invention  E : earlier patent document, but published on or after the filing date  O : document cited in the application  I : document cited for other reasons  &amp; : member of the same patent family, corresponding document</p>			

EP 02 29 0106 (EP 02 29 0106)



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## EUROPEAN SEARCH REPORT

Application Number  
EP 02 29 0106

DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		19 September 2002	SOGNO, M
CATEGORY OF CITED DOCUMENTS			
<p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another document of the same category  A : technological background  O : non-written disclosure  P : intermediate document</p>			
<p>T : theory or principle underlying the invention  E : earlier patent document, but published on, or after the filing date  D : document cited in the application  L : document cited for other reasons  &amp; : member of the same patent family, corresponding document</p>			

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ON EUROPEAN PATENT APPLICATION NO.**

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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